

It's been four months now since I've joined the ministry. In that time, I have come to understand the difficult challenges that face us. I've also had the opportunity to meet with many of you and to discuss our mutual goal — a safer, cleaner environment. I believe that together we are capable of many accomplishments in 1979, and I for one would like to see us achieve them. During the holiday season I would like to take the opportunity to wish you and your families a Merry Christmas and to say that I look forward to solving the challenges of the New Year.

Minister

*Harry Parrott*

The festive season gives me the opportunity to thank you all, within and outside of the Ministry, for your willing co-operation in our mutual task to keep Ontario clean. In the new year, I will continue to rely on your dedication and on your abilities to tackle our daily and long range problems. I wish you and your families an enjoyable and happy festive season and a fruitful New Year.

*K. H. Sharpe*  
Deputy Minister  
K. H. Sharpe

# Action program attacks industrial waste

Environment Ontario has taken the first steps in a seven-point action plan announced in October by Environment Minister Harry C. Parrott to deal with the 50 million gallons of industrial waste produced in the Province yearly.

A progress report on this action plan was presented to the Ontario Legislature by Dr. Parrott on November 22. Dr. Parrott said that he intended "to make things happen, and to happen quickly". The first steps include:

- A new classification and way-bill system for the monitoring and transport of wastes;
- Completion by mid-December of new stringent guidelines for the storage, treatment, and disposal of hauled liquid wastes;

- The establishment of interim storage sites until approved disposal facilities are placed in operation;
- The opening of discussions with U.S. authorities on keeping the border open to the flow of industrial wastes until Ontario has developed its own solutions for disposal;
- And a complete ban on landfill dumping of liquid wastes by January 1, 1980, except in specifically engineered chemical disposal sites.

The requirements for their treatment or disposal. It also provides definitive guidance to the generators and handlers of industrial wastes.

The new way-bill will be in use by January 1, 1979, and will trace each load from producer to final disposal. Penalties for failure to comply will range up to \$2,000 and even higher for violators who try to circumvent the system and dump wastes illegally.

The new guidelines for the handling, treatment and disposal of li-

(continued on pg. 3)

## ENVIRONMENT ONTARIO LEGACY

Vol. 7, No. 5

December 1978



(photo: John Steele)

### Dr. Parrott opens Thunder Bay sewage plant

Mickey Hennessy (centre), MPP for the Fort William riding is about to get a first-hand look at the sewage system improvements in the City of Thunder Bay, courtesy of the Honourable Harry C. Parrott (left) Minister of the Environment and the Honourable Leo Bernier, Minister of Northern Affairs (right).

on September 20, 1978. Cost of the project was shared by the Governments of Canada, Ontario and the City itself.

The improvements have increased the capacity of the Thunder Bay sewage treatment system to 636 million litres (40 million gallons) per day. They will also allow the development of about 65 square kilometers (25 square miles) of new land and allow for over 25 years of future growth of population and industry.

## Canada-Ontario agreement to focus on toxic materials

Following the signing of a new Canada-United States Great Lakes Water Quality Agreement in Ottawa, Ontario Environment Minister Harry C. Parrott announced that the Province is renegotiating with the federal government the Canada-Ontario agreement on the clean-up of the lakes.

"The intent of renegotiating the federal-provincial agreement is to take into consideration the new international agreement's focus on toxic substances and pollution of the lakes from land use and atmospheric sources," Dr. Parrott said.

"The new Canada-U.S. agreement follows a comprehensive review of progress achieved under the earlier agreement, and requires various additional programs and measures to meet problems in Great Lakes pollution which have come to light or were not fully understood in the early '70s," he said.

"While much progress was made in cleaning up municipal pollution under the first international agreement, the goals and measures of the 1978 agreement are much more comprehensive and provide for better surveillance, monitoring mechanisms, and control of toxic substances."

The revised Canada-U.S. agreement reaffirms obligations es-

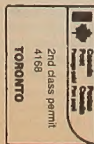
tablished in the 1972 agreement which emphasized control of municipal pollution and the establishment of industrial pollution control requirements. Since 1972 both countries have installed phosphorus removal facilities at sewage works, with all sewage capital im-

(continued on pg. 11)

## Inside LEGACY

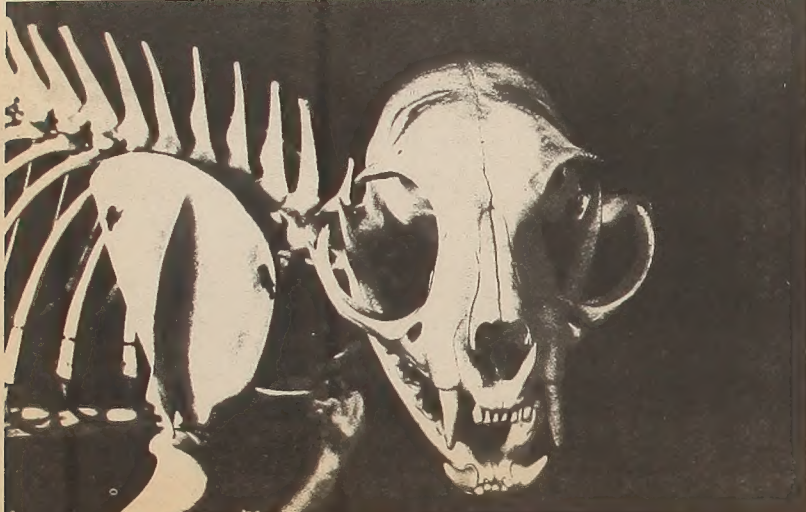
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# It's all one world...



## In dinosaurs' footsteps

Dinosaurs became extinct - together with about 75 percent of all animal species living at the time - about 65 million years ago because of an increase of global temperature caused by an excessive amount of carbon dioxide (CO<sub>2</sub>) in the air, believes Dewey M. McLean of the Virginia State University.

Prof. McLean argues that the recession of shallow seas of the time reduced the amount of marine algae living in them. Such algae are very large consumers of CO<sub>2</sub>, and their demise could have started a "hothouse" situation due to the CO<sub>2</sub> enrichment of the atmosphere.

The resulting slight increase in global temperature would in turn have raised the temperature of the oceans. As CO<sub>2</sub> is less soluble in warmer water, additional amounts of it would have been released to contribute further to the global warming.

The CO<sub>2</sub> was eventually cleaned out of the air by the vast carboniferous forests of the following geological period, only to be released into the air again by man-

kind's great consumption of fossil fuels in our time. The renewed release of the gas may have results similar to the ones that killed all dinosaurs 65 million years ago.

While the dinosaur could not do much about the contamination of his air and the climatic changes caused by it, we can - and the United States is starting to take the CO<sub>2</sub> problem seriously. Alarmed by a number of research reports, the US Department of Energy has

established an Office of Carbon Dioxide Research and Assessment.

The aim of this office, which will cost about \$16 million yearly when it is in full operation, is to "develop the ability to predict the economic, social and political cost of the increasing atmospheric concentration of CO<sub>2</sub> with sufficient confidence to permit policy decisions to be made on the future use of fossil fuels".

## POLLUTANT EFFECTS MAY BE ADDITIVE

Long term effects of even low concentrations of sulphur dioxide and nitrogen dioxide on plants are at least additive and probably synergistic, reveals a report published in the British magazine "Nature". Greenhouse studies have up to now underestimated

these effects because the air in laboratory greenhouses moves very little and because gas concentrations are kept constant. In nature they can vary by a factor of 10 during a day.

In the experiments performed at the University of Lancaster under conditions that approximate real field situations, a combination of SO<sub>2</sub> and NO<sub>2</sub> caused large reductions in total dry weight and in the leaf area of four species of pasture grass. When the gases were used separately, effects could sometimes not be measured. The researchers conclude that even low levels of SO<sub>2</sub> may be damaging, if NO<sub>2</sub> is also present.

## CITIES ARE GOOD FOR THE BIRDS

As unhealthy as our big cities have become to wildlife, some species of gulls seem to thrive in this habitat. Since it moved "downtown" from seashore cliffs in the 1940s, British gull population has grown to about one and a half million adults with a promise to double its numbers every three to six years.

This gull population explosion is due, according to a report by John Coulsons of Durham University, published in New Scientist, mostly to the fact that big city structures allow only a low density of nesting birds. This low density eliminates the interference of neighbouring gull pairs, a major cause of chick mortality in the natural gull habitat.

## CONNECTICUT STARTS CHAIN REACTION

Connecticut, being the downwind neighbour, sued its upwind neighbour, New York State and the US Environmental Protection Agency for "general impairment to health, safety and welfare" by air pollutants. Connecticut's authorities claim that New York generating stations and industries emit sulphur dioxide and oxides of nitrogen in excess of state and federal guidelines.

New York claims in defence that it suffers from the same sort of pollution coming from its westerly neighbours. Billions of dollars would have to be spent in New York State to clean up the emissions. Connecticut's action also could force New York to sue states further west, thus creating a chain of lawsuits across the country.

## NOT ENOUGH SACCCHARIN

Denmark has reduced the permitted level of saccharin in drinks from 150 to 75 milligrams per litre. As this amount is not enough to sweeten the drink, this regulation in effect bans sugar-free "diet" soft drinks in the country.

## US-CANADA TO SEEK CLEAN AIR TREATY

The foundation for the start of a combined Canadian-US attack on mutual air pollution problems has been laid by a directive issued by the US congress to the US secretary of state to work out an air pollution treaty with Canada. The directive orders the US secretary of state to "make every effort to negotiate a co-operative agreement with the government of Canada aimed at preserving our mutual airshed." The secretary also should take whatever diplomatic action appears necessary to reduce or eliminate any undesirable impact upon both countries resulting from air pollution from any source.

## COAL MOST DANGEROUS

Considering pollution-related fatalities among the public, as well as accidents in the mines, in transport and other operations involved in the industry, "coal has a much greater adverse impact on health than does nuclear power production," states the American Medical Association. Coal is the riskiest energy source of all, causing 18 times as many deaths as oil. Generating plants running on natural gas are about as safe as nuclear plants.

## LAWS SUPPORT WASTE

Technology is available to allow recycling of 75 per cent of the resources we use, claims Denis Hayes of Worldwatch Institute, Washington, D.C. Instead 70 per cent of all metals used are thrown away, and only 0.25 per cent of them remain in circulation after five years.

An improvement of our recycling record, however, does not depend particularly on technology. It requires a fundamental rethinking of the structure of our economy.

A good example of our wrong attitude can be found in taxation laws, especially those concerning depreciation. They place recycled materials in an uncompetitive position and encourage the use of virgin materials. Transport rates are also generally cheaper for ores than for recycled metals. Consumer prices also support the use of virgin materials, as the cost of the disposal of waste is hidden in taxes and not reflected in the final price of products.



Ontario

Ministry  
of the  
Environment

Hon. Harry C. Parrott, D.D.S.,  
Minister  
K. H. Sharpe,  
Deputy Minister

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Editor .....Robert Koci

Director of Information Services .....R.J. Frewin



# Most acid rain starts outside Ontario

The acid rain that changes the aquatic environment and threatens the fish population in our lakes and rivers is a world-wide phenomenon resulting from the world's dependence on fossil fuels. Dr. Tom Brydges of Environment Ontario's Water Resources Branch told members of the Rotary Club in Haliburton recently. Environment Ontario has been aware of this problem for some time and has studied the chemical composition of rain and snow in the Muskoka-Haliburton area since 1976. Dr. Brydges said.

While acid rain is falling in many parts of the world, only some lake areas are affected. The lakes in the Muskoka-Haliburton area are especially sensitive to acid precipitation, as they are underlain by insoluble bedrock with very little capacity to neutralize acids.

Many data on the subject have been collected up to now and while information is limited some conclusions can be drawn.

## Northern sources only partially implicated

The most important one is that the majority of acidic materials affecting the Haliburton area originate from directions for which northern sources in Ontario and Quebec can not be implicated.

"Of the 42 rainfalls investigated during the past two years, nine—21 per cent—originated in the northwest and could have contained a contribution from sources in Sudbury. Thirty-three—or 79 per cent—originated from directions for which Sudbury can not be blamed," explained Dr. Brydges.

During the recent shut-down of the INCO and Falconbridge mines at Sudbury the acidity values of rain in the Haliburton area showed an overall range of about the same values reported for times when both smelters were in operation. Evaluation of the limited data available must be done cautiously as the amounts of acid deposited in any given rainfall may vary over a range of about 200 times. Conclusions drawn from just a few rainfall events could be very misleading.

## 2 million tons against 12

There are other facts that must be considered. One of the main causes of acidic rain is the emission of  $SO_2$ . The total emission of this chemical in a zone that could affect our lakes, however, amounts to about 2 million tons per year from sources in Ontario and Quebec, and about 12 million tons from sources in the U.S. INCO itself discharges only about ten per cent of the total. Similarly, about 0.6 million tons of NOx com-

pounds originate from Ontario, while over 22 million tons of this material come from the U.S.

These figures indicate that an effective abatement program is only possible through international co-operation.

To lay a firm foundation for such co-operation, Environment Ontario and the Ministry of

Natural Resources have widened the lake study area to better define the extent of the problem.

Since there are indications of a possible connection between lake acidity and mercury in fish, the Ministry has also started a joint project with the Ontario Ministry of Natural Resources and the Canada Center for Inland Waters to study this relationship.

The quality of the Ministry's work on the acid rain problem has won world-wide recognition. Sweden, for example, uses technology developed in Ontario in a liming program covering some of its lakes. Environment Ontario's search for a solution to the acidification problem continues with a greater intensity and a greater scope than ever before.

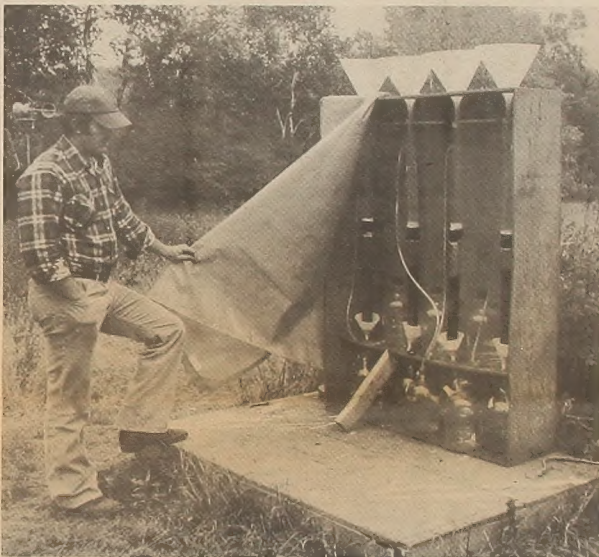


## L.F. Pitura heads waste management branch

The Ontario Ministry of the Environment has consolidated all components of waste management under the operational jurisdiction of one branch.

The new waste management branch is composed of two main sections: the waste utilization section, and the waste systems planning section, formed from Ministry branches with existing complement.

Leonard F. Pitura, the Ministry's former Northwestern regional director, will head Environment Ontario's new waste management branch. Mr. Pitura has recently completed a federal government course at the National Defence College in Kingston. The waste utilization section will be headed by Wes Williamson and the waste system planning section by Ed Turner. The branch will eventually be located at 4375 Chesswood Drive, in Downsview, but for the time being the waste system planning section under Mr. Turner is temporarily located at 40 St. Clair Avenue West in Toronto. The remainder of the branch is located in Downsview.



Environment Ontario scientist Don Reid examines a device built by him and his colleagues to determine the effect of various types of soil on the acidity of rainwater seeping through them. (photo: R. Koci)

## Action program attacks. . . (continued from pg. 1)

quid industrial wastes will be keyed to the classification system and will specify the requirements for each class of material. Guidelines for the storage of both new and waste chemicals have already been issued.

### Complete ban

Dr. Parrott also served notice of a complete ban on the disposal of untreated liquid industrial wastes in landfill sites other than secure chemical sites specifically engineered for this purpose by January 1, 1980.

To answer the immediate need for waste storage facilities Dr. Parrott announced that his Ministry has identified several possible sites. Some of these sites will be developed following public hearings and the Ministry's customary approval process. To maintain full control over these storage facilities, the Ministry will retain the ownership of such sites and contract their operation to private operators.

Dr. Parrott met with federal Environment Minister Len Marchand on November 21 to discuss the flow of industrial waste across the Canada-U.S. border.

"As you are aware, Canadian industry has been dependent upon facilities in the United States for the disposal of certain industrial wastes, including PCBs. Closing of the border would eliminate this essential means of disposal for use by our industry," Dr. Parrott informed the legislature.

"I am happy to report that the Canadian Government has opened discussion with U.S. authorities on keeping the border open to the flow of industrial wastes.

"Mr. Marchand and I agree, however, that this is only a stop-gap measure and that we must proceed immediately to develop our own solutions to our own problems.

"As part of our action program we will provide more information to the public on the problem of liquid waste and its disposal.

"It is obvious to me that neither the government nor industry can develop and establish facilities until people really understand the need for them and accept that technology for a variety of efficient disposal methods and facilities does exist.

"Our information activities will be aimed at having full public discussion of these problems and their solutions and this will proceed along with the other measures we plan.

"That's where we stand today. I am taking continuous action on this vital issue and I will keep you advised of further progress."

### Active waste exchange

At a meeting of the Canadian Manufacturer's Association in Peterborough, Dr. Parrott explained Environment Ontario's program for the disposal of liquid industrial wastes.

"Many processes are available for the disposal of industrial waste," Dr. Parrott said. "There is, for example, burning, solidification, fixation. A system that has seen much activity recently is the exchange of industrial waste materials going on with the assistance of the Ontario Research Foundation. It is based on the fact that the waste of a certain industry can be very helpful as raw material to another industry."

Dr. Parrott also stressed that al-

though his Ministry is fully prepared to help in the location of sites for waste disposal as well as in the design and installation of equipment, the Ministry will never operate such a project.

"I believe," the Minister said, "that the private sector can run such a site far better than the government. The operation of a disposal site is not the government's game. It never should be, and although the industry may not want it, it is their problem."

The time when anybody could start the operation of a waste disposal site without consent of the community is past, Dr. Parrott said. This situation has some real disadvantages, but these must be accepted. Therefore, approval of the community must be sought in public hearings, and to be successful, such hearings need a very open and honest approach.

Further action announced in Dr. Parrott's industrial waste disposal program include: long term regulations specifying disposal methods for various classes of wastes, mandatory registration of wastes by producers and the establishment of a fund to provide perpetual care of special disposal sites.



# 2700 work to provide water a



Since 1956 \$3 billion have been spent in Ontario to build more than 400 water and sewage treatment facilities to serve 6.4 million people in over 200 communities.

Yet the task is far from finished. Population growth and the accompanying new housing and industrial developments make extension or new construction of sewage and water treatment facilities a never-ending job.

During 1977/78, Environment Ontario's project co-ordination branch, responsible for managing and reviewing all Ministry capital projects, handled 236 construction contracts and administered the capital expenditure of about \$135 million. Of this amount 42.5 per cent was paid out as subsidies under Environment Ontario's construction program for municipalities.

During this year, Environment Ontario's construction jobs provided an estimated 2,700 man years of employment on site. Additional employment was created by these projects in the design and engineering and in the production of material and equipment.

At September 30, 1978, a

total 134 contracts valued at \$200 million were underway, including the construction of new water and sewage treatment facilities as well as the expansion of existing works. These construction jobs are financed in part by Environment Ontario grants and subsidies, and in part by grants and subsidies provided by CMHA, to supplement the resources of the municipalities involved.

Construction contracts now underway and scheduled for completion during 1978 and 1979 provide an estimated 4,000 man-years of employment on site.

In June 1978, the Ontario Government established through Environment Ontario a direct grant plan to help municipalities build urgently needed sewage and water projects. These grants will be calculated as percentages of net capital costs and are provided under two categories:

1. direct grants of 15 per cent for major water and sewage works in support of urban growth and to encourage economies of scale for area projects en-

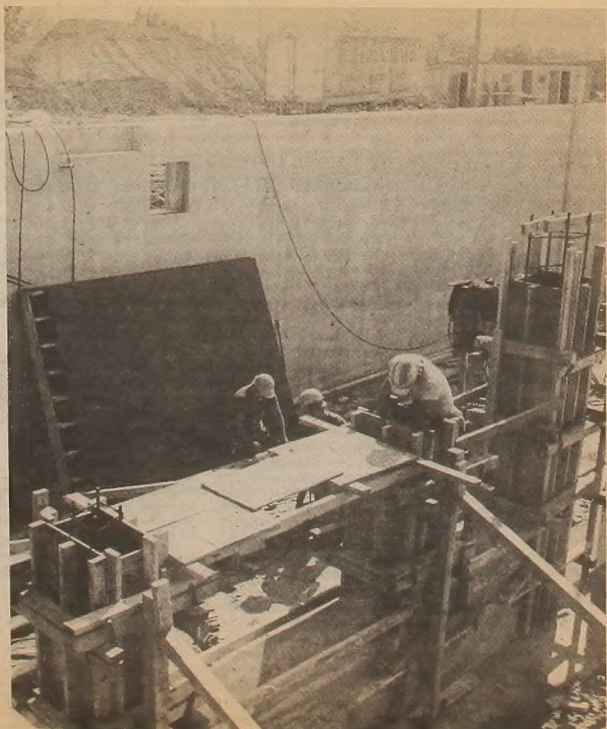
compassing more than one municipality, and

2. direct grants of up to 75 per cent of the net capital cost offered to small municipalities, where the capital costs per lot serviced would exceed \$1,100 and \$1,400 for water and sewage respectively.

In addition, the Ontario Government has established through Environment Ontario a program of grants that will give small municipalities the most cost-effective opportunity to upgrade private systems without taking on the financial burden of more elaborate communal water and sewage treatment works.

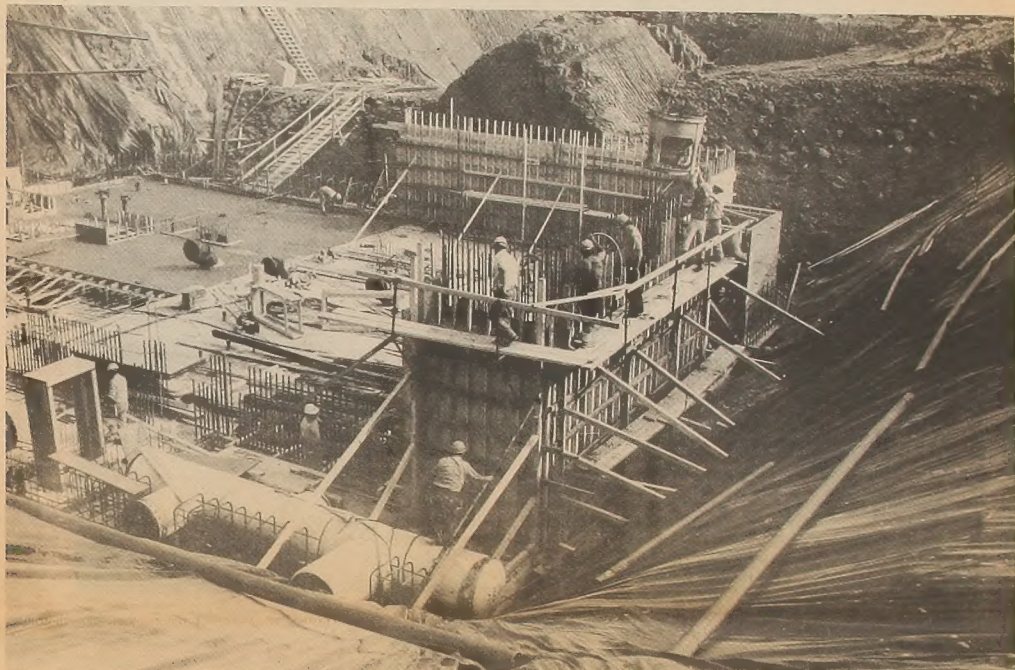
This latter assistance provides the cost of a consulting engineer's report to identify the problem, propose alternate solutions and make recommendations, and up to 75 per cent of the construction costs that are in accordance with the recommended solution approved by the Ministry.

The construction of two projects based on such grants has recently started; several others are being prepared.





# and sewage services in Ontario



(Clockwise, starting at the far left: A pumping station is under construction in Belle River as part of the \$7 million Maidstone Township sewage system. Up to now \$10 million have been committed for the construction of a \$40 million water treatment plant now under construction in Nanticoke. The construction of a round brick manhole calls for some special skills; the manhole on the photo is being built at the \$1 million Mara Township water treatment plant in Lagoon City on the east shore of Lake Simcoe. The addition of buildings to house machinery is part of the \$2 million extension of the Niagara water pollution control plant in Fort Erie. At the Region of Niagara provincial sewage works in Stamford, workers are finishing the construction of an added reservoir.

(photos: R. Koci)







# Experi Stu wo

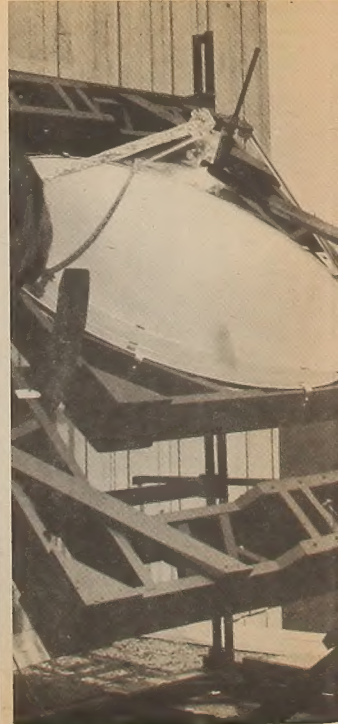
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Students of the  
small stream flo  
L. Sullivan, the

(photo: R. Koci)



Sam Seeman and one of the students of Twin Valley  
Wardsville apply rust preventive paint to a tank that will f  
sewage disposal system the students are building for their



cience '78

# Students, environment experts work on ecology problems

As in the past Environment Ontario has again participated in the "Experience '78" Ontario Government student program by involving a record number of 420 students from Ontario universities and colleges in a total of 104 environmentally-oriented projects. These projects, funded through the Ontario Youth Secretariat, had a total budget of \$500,000.

The majority of the studies were conducted at Ontario universities and colleges under the supervision of professors. Other projects were conducted under direct supervision of Environment Ontario experts or

in close co-operation with municipalities and environmental organizations, such as the Canadian Environmental Law Society or Pollution Probe.

In all instances, however, the projects, lasting generally for 13 weeks, were co-ordinated by Environment Ontario officers.

Some of the projects were simple and involved the work of only a few students - the investigation of the possibility of producing tar and methane from poplar tree wood, for example. In other cases, as in the development of the George White Memorial Outdoor Centre

in London or the preparation of audio-visual material for environmental education at Queens University in Kingston, up to ten students were employed.

Many of the projects were integrated with ongoing Environment Ontario programs. Trent University students, for example, contributed significantly to the gathering of water and soil samples in the Ministry's lakeshore capacity and acid rain projects. At Carleton University another group collected data for the Ministry's investigation of highway noise, and investigated hazardous substances.

In other instances the students helped to build a platform for future Ministry projects, as in the setting up of an automated system for the determination of arsenic content of samples or in a study of the perishability of bacteria in samples, or in the investigation of waste management practices in hospitals.

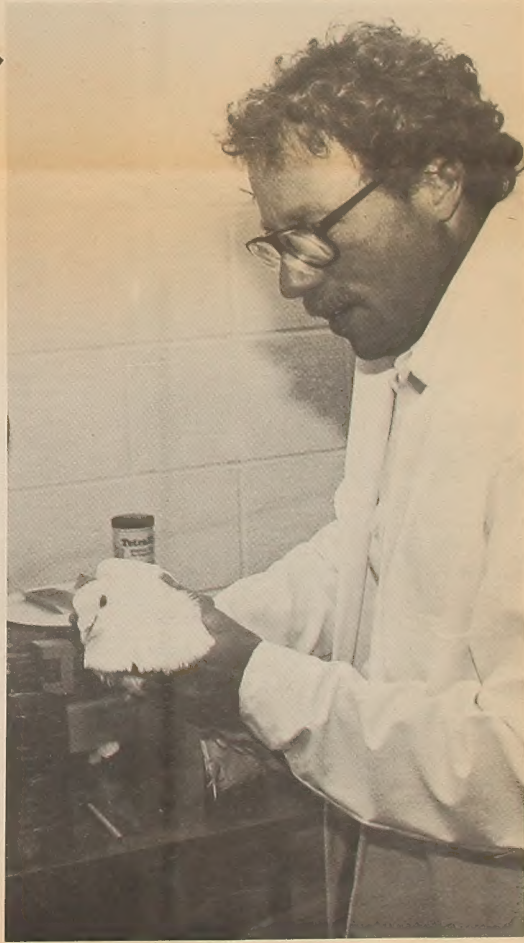
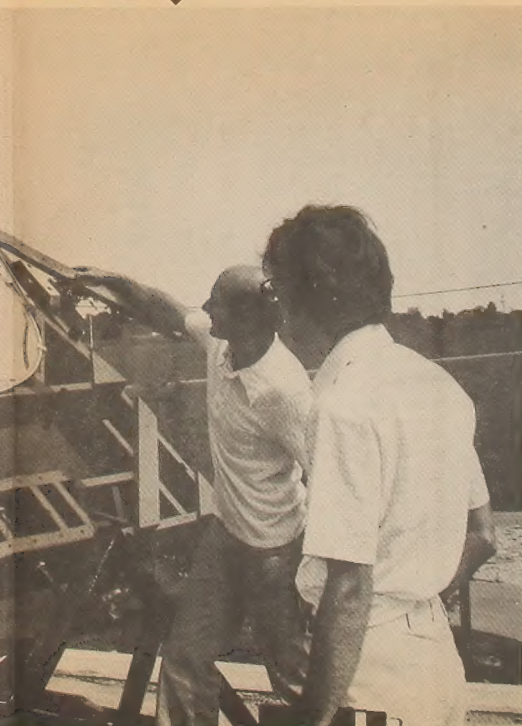
In all cases the students' work contributed materially to the Ministry's constant surveillance of the environment or to its continuous search for ways and means to improve our environment and to prevent further damage to it.

University of Western Ontario in London sample water from a flowing by a feedlot to determine, under the guidance of Prof. J. the influence of such an operation on watercourses.

At Queens University's biological laboratory, Dr. R. G. Weisman prepares a pigeon used in his study on the psychotoxic effect of lead on the memory of animals. Dr. Weisman and his students found that pigeons are better suited for their work than rats who seem to have developed a resistance against heavy metal poisoning.

An effective system for the storage of sun and wind energy collected by a parabolic mirror and a windmill was developed by students of Trent University, Peterborough, under the guidance of Dr. J. N. Earnshaw. In the windmill system the energy was collected by the use of a torque converter (automatic transmission from an automobile) submerged in water.

School in  
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## Environmental education . . . with Jane Watson Educational Resources Co-ordinator

# ENVIRONMENT ONTARIO'S EDUCATIONAL MATERIALS

The Ontario Ministry of the Environment distributes educational materials to teachers at both elementary and secondary school levels. These fact sheets are sent to everyone on the liaison teacher mailing list free of charge. The material may be duplicated by the teacher to provide class sets.

The following material is now available from:

**Information Services Branch  
Ministry of the Environment  
135 St. Clair Avenue West  
Toronto, Ontario  
M4V 1P5**

Please allow a minimum of four weeks for delivery.

### ADDITIONAL FACT SHEETS

Ed 7 A Lesson Plan for Measuring Some Water Quality Criteria  
Ed 8 A Lesson Plan for a Land-Use Simulation Game  
Ed 9 A Lesson Plan for Investigating An Urban Environment  
Ed 10 About Waste: What Can One Family Do?  
Ed 11 Composting  
Ed 12 Constructing a Classroom Ecosystem  
Ed 13 It's Not All Garbage  
Ed 14 How to Publicize a Recycling Drive  
Ed 15 Clean-up Days

### FOR THE STUDENT

Ed 2 Envirofacts and Fun - a game book on pollution in tabloid format  
Ed 3 Ontario's Environment Today - a tabloid on environmental issues (for high school students)  
Ed 4 Solutions to Pollution with the Anti-Pollutes of Donba Creek - a coloring book and story about Fran the Toad for young children.

recommended that at least three weeks prior notice be given and if possible, alternate dates.  
Modern Talking Picture Services  
1943 Leslie Street  
Don Mills, Ontario  
1-416-444-7347

### FOR SECONDARY SCHOOL TEACHERS

**Ted Set I**  
About Air Pollution  
Air Pollution and the Automobile  
Introduction to Water Pollution Control  
About Pesticides and the Environment  
About Waste: What Can One Family Do?

**Ted Set III**  
Ontario's Air Pollution Index  
Resource Recovery  
Odours  
Noise Measurement - The Decibel  
Planning a Pollution Slide Show/Seminar

**Ted Set III**  
Class Outings: Sunnyside Up/Down  
Alternatives to Waste Disposal  
Recycle and Save Our Resources  
How to Publicize a Recycling Drive  
Selecting a Landfill Site  
Noise Studies  
**Ted Set V**  
Air Pollution and Weather  
Geography and the Community  
Pollution in the Great Lakes  
Investigating Environmental Habits

**Ted Set II**  
Water Pollution - What Can I Do?  
A Visit to a Landfill Site  
Air Pollution - Particulates  
Constructing a Classroom Ecosystem  
An Anti-Pollution Club  
Education Study Project for High School Students  
Cafeteria Crisis  
The Present Tense of Soap

### MANUALS

The following books are available **only** from the Publications Centre, Ontario Government Bookstore, 880 Bay Street, Toronto, Ontario, M7A 1N8. Please make cheques payable to the Treasurer of Ontario.  
**From the Lakes . . . to the Trees**  
An Environmental Handbook for Camp Leaders, 1978. Includes field studies, identification guides, games, arts and crafts, poetry and songs. 83 pages. \$1.

### Environmental Studies for Special Education Teachers

Environmental lesson plans for teachers working with handicapped children. 160 pages. \$2.

### SLIDE SHOWS

Audio-visual presentations may be borrowed from the Ministry on a three week loan period. When requesting, please give six weeks advance notice and alternate dates for viewing, if possible.  
Join The Waste Watchers  
- Includes 65 slides, tape cassette and script.  
- Describes the various methods of waste disposal with emphasis on resource recovery. Also calls for consumer action.

**Controlling Noise in Ontario**  
- includes 80 slides, tape cassette and script.  
- discusses noise problems, government action and the new model bylaw.

### FILMS

For reservations:  
Films are not circulated by the Ministry, but may be borrowed by writing to the address below. It is

### ENVIRONMENT ONTARIO

This film provides a look at the pollution problems in this Province, some of the solutions, and the role of the Ministry of the Environment and its staff in managing the environment in Ontario. This is recommended as a 'first choice' for those interested in an overview of the environmental problems in the Province. 23 minutes, color

### THE INVISIBLE RIVER

Produced by the Ministry of the Environment for a general audience, this film holds special appeal for young people. The construction of a water supply system to carry water from the Great Lakes to an inland community is compared to building a children's sand castle on a beach. 19 minutes, color

### FOR ELEMENTARY SCHOOL TEACHERS

**Ted Set IE**  
Mini Posters for Coloring  
Crossword Puzzle  
Collage  
Stories  
**Ted Set 2E**  
Introduction to Solid Waste and Recycling  
Learning About Waste: Activities  
Teaching About Air Pollution  
Noise Studies  
Comparing Plant and Animal Life in Water  
**Ted Set 3E**  
Clean-up Day  
City Street Trees

City Planning  
The School Site as a Teaching Resource

**Ted Set 4E**  
Taking a Closer Look at Snow  
Aquatic Habitat Study  
Lawn Study  
A Lesson Plan for Studying Soil

**Ted Set 5E**  
Woodland Activity Book  
The Terrarium  
Solid Waste  
Techniques of the Blind Walk  
Organizing the Middle Junior High Laboratory Classroom

### WOMEN IN THE ENVIRONMENT

To commemorate International Women's Year, the Ministry of the Environment embarked upon a project to serve as a tribute to the many women employed in the environmental field . . . a film. The result is more than a catalogue of

jobs. It is a film containing a mass of important, up-to-date, environmental information. The film should be of particular value to biology and geography teachers of senior secondary school students as well as to guidance counsellors.

### POSTERS

Edp 1 Join The Waste Watchers-I (a poster for children to color)  
Edp 2 Join The Waste Watcher-II (a colored poster for high school use)  
Edp 3 Ogg Posters - Air  
Edp 4 Ogg Posters - Water  
Edp 5 Ogg Posters - Waste  
Edp 6 Ogg Posters - Noise  
Edp 7 Ogg Posters - Auto Emissions  
Edp 8 Ogg Posters - Pesticides





Properly approached, even the youngest children become interested and active participants in environmental action

(photo: Eamonn O'Halloran)

## The year of the child

# Involving the next generation



In response to the UN proclamation of the year 1979 as the International Year of the Child (IYC), Environment Ontario is preparing a program designed to help children to better understand their place, their responsibilities and their impact upon the environment. This program, based on the commitment of the federal and the Ontario governments to the proclamation, will consist of a number of activities that will enlarge the Ministry's existing education projects.

To ensure a wide participation of young people, the Ministry, of the Environment will be sponsoring a page in several issues of Small Times Magazine, a publication with a readership of 100,000 elementary school children and 25,000 high school students. The content of this publication is written by children, and the young reporters will visit some of the Ministry's facilities and interview staff to write about this Ministry's aims and activities.

### From the Toad

For the small fry a new coloring book about Fran the Toad's fight against pollution will be distributed free through the Government's Distribution Centre.

### Introducing Your Child to Nature

To help parents to develop in their children an appreciation and enjoyment of nature, a manual filled with easy-to-do, fun-learning experiences, titled "Introducing Your Child to Nature" will be available for a minimal charge at the Ontario Government Bookstore at 880 Bay Street in January.

### Parent/child workshops

Aimed at increasing environmental awareness and promoting family unity will be a series of six province-wide workshops the Ministry will sponsor for children and parents. Non-government organizations, such as the Association of Canadian Interpreters and the Council of Outdoor Educators of Ontario will assist the Ministry in the planning of this project, designed for 5 to 12 year olds accompanied by adults.

Available on pre-registration only, the workshops will give participants an opportunity to choose two activities a day from a variety of sessions, including aquatic, orienteering, lawn and field, flower, tree and bud studies and nature photography.

### Manual for handicapped

Ideas and advice useful to scout guides and other leaders producing programs for physically and mentally handicapped young people will be contained in a manual "Exploring Nature with the Handicapped". This manual will also be available through government book stores.

### Workshop for teachers

A workshop for special education teachers who are working with handicapped will be held on May 11 to 13 in Bolton, Ontario, to assist and encourage them in incorporating environmental activities into regular classroom work.

### Day camp program

During the summer, university students hired by the Ministry will visit children's camps to involve youth in a variety of environmental studies and to develop in them an interest in preserving and in protecting the environment. This program which has been very successful in the past, will include visits to day camps.

### Student newspapers

Two students' newspapers containing environmental information for students will be published in the fall of 1979. One of the papers, designed for secondary school students, will contain more detailed technical articles, while the simpler paper for use in elementary schools will carry cartoons and pictures for coloring as well as information for the young audience.



The study of an enclosed eco-system can be very fascinating



# Northerners urged to set their own goals for future



Ed Fahlgren, Commission Chairman

(Photo: Hans Eppes)

## Better waste collection developed in Windsor

A one-year study, released by Environment Minister Harry C. Parrott, demonstrates a mechanical garbage collection system which is more efficient and, in the long run, cheaper, than the conventional manual method.

The study, which involved over 1,500 households in Windsor, began in 1976 as a joint venture between the City of Windsor and the Ontario Ministry of the Environment.

The Ministry, which was responsible for preparation of the final report, contributed \$100,000 to the study in the form of equipment. The equipment included plastic wheeled garbage containers and special collector trucks which eliminated most of the heavy lifting normally required. Back injuries sustained through lifting heavy weights are the greatest occupational hazard for municipal waste collectors.

In one study area, a two-man back-loading collector-truck was used. The truck was driven to the curb side where a mechanical arm lifted individual 90-gallon containers or communal 300-gallon

containers, emptied them, and returned them to the curb.

Side-loading collector-trucks proved more effective in the study due to their speed and strength in lifting and reduced manpower requirements.

"The study will enable us to provide valuable information on mechanical garbage collection to municipalities in the Province who are interested in improving existing systems," said Dr. Parrott. "We now know that although the initial capital costs involved in installing a mechanical collection system are fairly high, they are eventually offset by reduced labor costs."

"I am also pleased that, with the study completed, we have been able to make the equipment we purchased for it available to the Glass Gobbler Program, sponsored by the Glass Container Council of Canada, which is successfully collecting glass for recycling."

Dr. Parrott expressed his appreciation of the willing co-operation on the part of the Windsor householders involved. "They made a great contribution to the success of the study."

Copies of the report are available from:

The Waste Management Branch  
Ontario Ministry of the Environment  
4375 Chesswood Drive  
Downsview, Ont.  
M3J 2C2

### PETERBOROUGH LANDELL SITE APPROVED

The Ontario Ministry of the Environment has approved The City of Peterborough's application for a 100-acre waste disposal site in the Township of Otonabee, about nine kilometers south-east of Peterborough.

The Certificate of Approval sets out the conditions that the municipality must meet in operating the site.

The approval follows recommendations issued in late August by the Environmental Assessment Board. During the 10 sessions held between December 1977 and April 1978, the Board heard evidence from more than 25 witnesses.

"What kind of North do we want to see in the next 10 to 20 years, and how do we bring it about? We must answer these questions before we can resolve the apparent conflicts between industrial expansion and environmental protection," said Ed Fahlgren, the new Chairman of the Commission on the Northern Environment in discussing the long-term strategy for his Commission. He stressed his commitment to involve northerners in developing a set of goals for the future of the North.

The Commission will provide a forum for northerners to reach their own conclusions about what the future of the North should be. "I want and need to hear from all northerners — whether they are Euro-Canadian or native, whether they represent industry, labour, women or the environment."

Northern offices are being set up in Thunder Bay and Timmins, to bring Commission staff closer to the people they serve. The Timmins office is at 261 Third Street, and the Commission is looking for office space in Thunder Bay.

The Commission's research will include consideration of development options ranging from a conservationist, slow-growth option to stimulated and accelerated development. The means by which development decisions about the north are presently made, and alternatives, will be considered. The experience of other areas in deal-

ing with northern issues will be tapped. Fahlgren will use northern universities and research groups, as much as possible, to conduct his research.

## APCA calls for papers

A call for technical papers has been issued by the conference committee planning the 1979 Joint Annual Conference of the Ontario Section, Air Pollution Control Association and the Pollution Control Association of Ontario.

Conference chairman Steve Black is seeking a range of papers which will cover subjects on the following basic themes:

- Interdisciplinary (acid rain; environmental law, etc)
- Innovative technology
- Plant operations
- Plant designs
- Solid wastes management
- Toxic chemicals
- Contingency planning
- Economics of pollution abatement

Authors interested in presenting papers should send a brief abstract to Orlando Martini, James F. MacLaren Ltd., 435 McNichol Ave., Willowdale, Ont. M2H 2R8.

The conference will be held at the Prince Hotel, Toronto, April 22-25, 1979.

## R.M. Gotts NW-region director

The appointment of R.M. Gotts as regional director of the Ministry of the Environment's northwest region has been announced by K.H. Sharpe, deputy minister.

Based at the regional office in Thunder Bay, Mr. Gotts has served as acting director for the past year. He will direct a staff of 75 Ministry employees responsible for industrial and municipal pollution abatement programs in northwestern Ontario, including the districts of Rainy River, Kenora, and Thunder Bay.

Mr. Gotts was previously assistant regional director and manager of municipal and private abatement in the northwest region since 1974. In 1973, he was supervisor of regional operations for the Ministry's solid waste management branch. From 1962 to 1972 Mr. Gotts was a regional engineer with the former Ontario Water Resources Commission. He



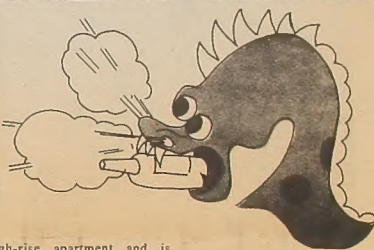
graduated with a degree in chemical engineering from the University of Waterloo in 1962. He is a member of several professional associations, including the American Public Works Association and the Ontario Association of Professional Engineers.

Mr. Gotts succeeds L.F. Pitura who is now serving as director of the Ministry's new waste management branch.





# Glass Gobbler expects one, gets six million bottles



In its first year of operation Toronto's Glass Gobbler Hotel and Commercial Program for the collection and recycling of bottles has by far exceeded the expectations of its originators, the Glass Container Council of Canada and Environment Ontario.

At the start of the project in October 1977 it was expected that the program would remove about 1.3 million non-reusable bottles from Metro Toronto's waste stream. In the first six months of its operation, however, the project's 6-ton truck delivered 2.5 million bottles to two glass manufacturing companies for recycling. During the second half of the year a 9-ton truck had to be added and 3.9 million bottles were collected from well over 100 restaurants and hotels in Metro. The first year's total of 6.4 million bottles exceeds the original expectations about five times.

The huge success hides the fact, that the first year's operation encountered some unexpected problems. Most were solved, but a crucial one persists: the collectors find that their glass load is contaminated with earthenware and china shards. These materials cannot be separated from the glass, cannot be melted in the glass furnaces, and in many cases the total load must be rejected if even only small amounts of non-glass material are found in it.

In its second year the program will be considerably extended in co-operation with the Variety Club, a benevolent service organization of members from the entertainment and hospitality industry and from business. Proceeds from the Club's activities support a variety of programs to help handicapped in many countries.

The Variety Club has already established a first glass container collection

depot at Darrigo's Supermarket on Old Weston Road, and is preparing the opening of three additional sites for the collection of non-returnable bottles from private households.

The Club is also supporting the organization of glass container collection in larger apartment complexes. This part of the project has already started in one downtown

high-rise apartment and is about to expand to several others. To streamline its operation, Glass Gobbler is adding a new 18-ton truck to its fleet.

Although the venture has contributed to a reduction of Metro's waste collection and disposal in land fill sites, it has not as yet been profitable for the glass industry.

But if the established trend continues there is no doubt that the recycling of non-returnable glass will, in the end, prove profitable in terms of cost of raw material and, perhaps more importantly, in saving energy in the energy-intensive glass manufacturing industry.

## Strong winds clear TTC-strike fumes

Carbon monoxide levels in Toronto increased slightly during the four-day Toronto Transit Commission strike but remained well within the one-hour Ontario criterion of 30 parts per million.

Examination of data from Environment Ontario's seven-station air monitoring network across Metropolitan Toronto from September 11-16 indicate hourly values of nine to 16 parts per million in the city during the morning rush hour of the first day of the strike. The Ministry's air resources branch related these levels to poor dispersion conditions caused by light winds.

Stronger winds on September 12 to 14 kept carbon monoxide levels to a maximum of seven parts per million with most stations reading between two and four parts per million carbon monoxide during rush hours. These levels were not significantly different from those monitored during a comparable period in September 1977 when the TTC was operating.

The Ministry's monitoring during the four-day strike and during the last TTC strike in 1974 indicates that general concentration of carbon monoxide is more closely

linked with weather rather than with the increase in road traffic. While carbon monoxide levels increased only slightly during the TTC strike, CO levels at some heavily congested intersections

may have gone further above normal. However, there is no indication of any health hazards from auto pollutants even during the abnormally congested traffic conditions existing during the strike.

## Canada-Ontario agreement

(continued from page 1)

improvements for Ontario municipalities costing \$800 million.

The new emphasis in the agreement is to ensure that all remaining municipal and industrial sources of pollution pinpointed to date are under control by 1983, and that wastes and toxic substances from other sources, such as agricultural and urban land drainage and airborne pollution, are controlled and reduced.

Dr. Parrott explained that Ontario's program of water quality surveillance and assessment covers the nearshore waters of the Great Lakes. Cost is shared equally with the federal government under the Canada-Ontario agreement.

Major objective is to maintain surveillance and define where pollution abatement and preventative measures should be altered to maintain water quality.

"Ontario is particularly pleased that the new agreement provides for programs to identify sources for long-range air pollution and to co-ordinate remedial measures. Since the 1972 accord, much concern has arisen with regard to airborne pollutants such as sulphur dioxide, sulphates, heavy metals, phosphorus, and toxic organic substances which are carried long distances and deposited into water with the possible threat of entering the food chains of fish, wildlife, and man," Dr. Parrott said.

Under the new international agreement, both countries will continue to spend \$10 million annually to provide co-ordinated surveillance and monitoring. This will cover an early warning system, identification and control of toxic substances, radioactivity and other pollutants.

## Little Long Lac receives low cost alternatives grant

Ontario Environment Minister Harry C. Parrott issued a \$23,126 cheque to the community of Little Long Lac as initial disbursement on a \$46,000 Government of Ontario grant for the construction of a water supply system for the community.

"This grant is the second one given under the 'low cost alternatives' to communal systems scheme established in 1977 for small communities," Dr. Parrott said. "The assistance, covering 75 per cent of the construction costs currently estimated at \$61,000, provides an opportunity for private municipalities to upgrade private systems without shouldering

the financial burden of more elaborate communal waste and sewage works."

The existing system was installed by a local mine in 1934, and has since deteriorated beyond repair. Major leakage in the system has also raised water consumption to a level not acceptable to the community.

The grant will allow the community to construct approximately 1,200 meters (3,500 feet) of 10-centimeter (4-inch) watermain including operating valves and four hydrants, and about 500 meters (1,400 feet) of 2-centimeter (3/4-inch) water service connections.



## ONE OR TWO HOLER?



After opening a new sewage disposal plant in Thedford, Environment Ontario Minister Harry S. Parrott inspected a now obsolete early Canadian waste disposal facility in the area.

(photo: Tessa Buchanan)

## A. CLARK NAMED WOMAN'S ADVISOR



Annemarie Clark has been appointed women's advisor with Environment Ontario's personnel branch.

Ms Clark served with Environment's Ontario's finance and administration division since 1973.

She started her career, after graduating from the Faculty of Music of the University of Toronto, as supervisor of information with the Ontario Health Insurance Plan. Her interest in music, especially opera, induced her to leave civil service work to become a free-lance performer with the

Stratford Festival and the Canadian Opera Company, and to a membership on the Executive Committee of the Canadian Actors Equity Association.

Between engagements across Canada and the US, Ms Clark worked in management with a private personnel agency. The experiences gained in this field led her back to the civil service.

Looking forward to the challenge of her new position, Miss Clark is committed to the ideal of helping individuals in the Ministry develop to their full potential.

Ms Clark replaces Ms Grace Blackadar, who retired in October.

## T.W. CROSS DIRECTOR, AIR RESOURCES

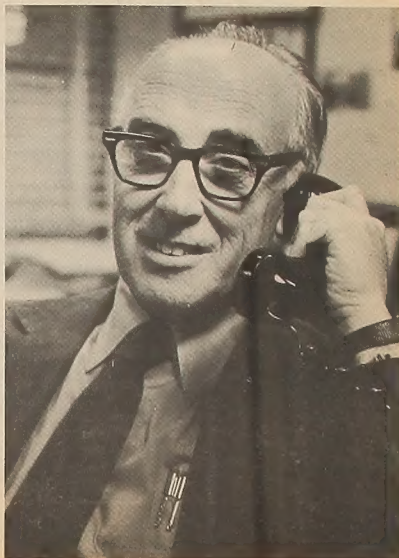
The appointment of Thomas W. Cross as director of the Ministry's air resources branch, has been announced by deputy minister K. H. Sharpe.

Mr. Cross has served as assistant director since February 1976, prior to which he served as assistant director of the former air management branch from 1968 to 1974. From 1974 to 1976, he was director of technical services of the Ministry's former utility and laboratory services division.

Mr. Cross joined the original air pollution control services of the Ontario Government as an engineer in 1966, following several senior positions as a civil engineer in private industry.

He is a member of several professional organizations, including the Air Pollution Control Association and the Association of Professional Engineers of Ontario. Mr. Cross is chairman of the inter-ministerial Hazardous Contaminants Technical Committee and the Nanticoke Environmental Management Program, and Ministry representative on the Toronto District Heating System Management Committee.

Mr. Cross succeeds A. J. Harris who retired in October.



## LEAVE IT TO BEAVER



One of the biggest obstacles of the Lake Capacity Study underway in a number of Muskoka Lakes is the activity of beavers building dams where they play havoc with instruments installed to measure lake inflow and outflow. At an inspection tour, water resources branch director G.H. Mills, scientist Don Reid and limnology section supervisor Dr. T. G. Brydges admire a dam built by a crafty beaver right under a small bridge over a lake outflow.

(photo: R. Koci)